WHAT IS CLAIMED IS:

1. A system, comprising:

a) a transonic turbine comprising one or more stages, each including

i) rotors carrying turbine blades and

ii) stators and

having a normalized energy extraction per stage above 0.0725 BTU/(lbm*R); and

b) means on a rotor for unloading turbine blades at their trailing edges.

2. System according to claim 1, wherein said means comprises a region on a suction surface of a turbine blade, which

i) terminates with the trailing edge of the turbine blade, and

ii) has no more than six degrees of bending.

3. System according to claim 2, wherein said means has no more than two degrees of bending.

4. System according to claim 2, wherein metal angle of said region continually increases in the downstream direction.

5. System according to claim 4, wherein the first derivative of metal angle continually increases in the downstream direction.

6. A system, comprising:

a) a transonic turbine comprising one or more stages, each including

i) rotors carrying turbine blades and

ii) stators and

having an absolute pressure ratio per stage between 3.5 and 5.0; and

b) means on a rotor for unloading turbine blades at their trailing edges.

7. System according to claim 6, wherein said means comprises a region on a suction surface of a turbine blade, which

i) terminates with the trailing edge of the turbine blade, and

ii) has no more than two degrees of bending.

8. System according to claim 7, wherein metal angle of said region continually increases in the downstream direction.

9. System according to claim 8, wherein the first derivative of metal angle continually increases in the downstream direction.

10. A suction side for use in a turbine blade and having an airfoil mouth defined thereon, comprising:

a) a lift region; and

c) a trailing surface located downstream of the airfoil mouth and containing no more than two degrees of bending.

11. Apparatus according to claim 10, wherein the trailing surface becomes progressively closer to the circumferential direction as the trailing surface progresses in the downstream direction.

12. A system, comprising:

a) first and second turbine blades,

i) each having a suction side and a pressure side, and

ii) both cooperating to form an airfoil passage therebetween which terminates in an airfoil mouth; and

b) on the second blade, a suction surface on the suction side which is configured such that: i) all bending, except two degrees of bending, lies forward of the airfoil mouth.

13. A transonic turbine blade system, comprising:

a) a pair of neighboring blades, which cooperate to define an airfoil passage and an airfoil mouth;

b) a suction side on one of the blades, having a blade metal angle defined therein, such that, downstream of the airfoil mouth, the metal angle

i) progressively increases in the downstream direction, and

ii) has a derivative which also progressively increases in the downstream direction.

14. A transonic turbine blade having a trailing edge and which causes a wake downstream of the trailing edge, comprising:

a) a suction side;

b) a pressure side; and

c) means for unloading the trailing edge.

15. Blade according to claim 14, wherein the means causes the wake to turn toward the pressure side.

16. Apparatus, comprising:

a) a row of transonic turbine blades having trailing edges which are no more than 0.029 inch thick, in which

i) airfoil passages are defined between adjacent blades and

ii) expansion waves emanate from points on the suction surfaces of the blades, the points being located on the suction surfaces of the blades; and

b) means for creating a cross-passage shock through which the expansion waves pass, to thereby attain a ratio of

(maximum static pressure / minimum static pressure)

in a 50 percent chord plane of less than 1.35.

17. Apparatus according to claim 16, wherein the means comprises an apparatus for reducing the aerodynamic loading of the trailing edges of the blades.

18. Apparatus comprising:

a) a turbine rotor; and

b) blades on the rotor having trailing edges no more than 0.029 inch thick, which

i) have a chord length defined therein,

ii) are located in a transonic, or greater, flow, and

iii) generate a pressure field in which the ratio of

(maximum static pressure / minimum static pressure)

in a 50 percent chord plane is less than 1.35.

19. A turbine blade, comprising:

a) a blade mouth defined on the suction side;

b) 94 degrees or more of curve of the suction side located upstream of the mouth; and

c) a trailing edge of thickness between 0.027 and 0.031 inch.